WO 2005/042896 PCT/US2004/036488

I Claim:

1. A valved moisture barrier between first and second environments, said moisture barrier comprising first and second moisture barriers separated by an insulating space and separating said insulating space from said first and second environments, respectively, and bypass means for bypassing each of said first and second moisture barriers, at least one of the bypass means comprising at least one controllable vent actuated to cause said insulating space to be substantially vented to whichever of said first and second environments is cooler.

- 2. A valved moisture barrier as claimed in claim 1, wherein said controllable vent bypasses said first moisture barrier and said second moisture barrier is permeable to air at a rate less than a rate at which said controllable vent is capable of passing air when it is open.
- 3. A valved moisture barrier as claimed in claim 2, wherein said first environment is an interior space of a building and said second environment is outside of said building.
- 4. A valved moisture barrier as claimed in claim 2, wherein said second environment is an interior space of a building and said first environment is outside of said building.
- 5. A valved moisture barrier between first and second environments, said moisture barrier comprising first and second moisture barriers separated by an insulating space and separating said insulating space from said first and second environments, respectively, a first controllable vent communicating said insulating space with said first environment and a second controllable vent communicating said insulating space with said second environment.
- 6. A valved moisture barrier as claimed in claim 5, further comprising at least one valve actuator for opening each vent when the temperature in said insulating space is higher than in its respective environment.
- 7. A valved moisture barrier as claimed in claim 6, further comprising at least one valve actuator for opening said first controllable vent when the temperature in said second environment is higher than in said first environment and for opening said second controllable vent when the temperature in said first environment is higher than in said second environment.
- 8. A valved moisture barrier as claimed in claim 7, wherein said actuator comprises a differential temperature actuator.
- 9. A valved moisture barrier as claimed in claim 6, wherein at least one of said vents comprises a bistable leakage bivalve.

9

WO 2005/042896 PCT/US2004/036488

10. A valved moisture barrier as claimed in claim 9, further comprising a differential temperature actuator controlling said bivalve.

- 11. A valved moisture barrier between first and second environments, said moisture barrier comprising first and second moisture barriers separated by an insulating space and separating said insulating space from said first and second environments, respectively, said first moisture barrier being breathable to allow passage of air between said insulating space and said first environment, and a controllable vent communicating said insulating space with said second environment.
- 12. A valved moisture barrier as claimed in claim 11, further comprising a valve actuator for opening said vent when the temperature in said second environment is lower than the temperature in said first environment.
- 13. A valved moisture barrier as claimed in claim 11, further comprising a valve actuator for opening said vent when the temperature in said second environment is lower than the temperature in said insulating space.
- 14. A valved moisture barrier as claimed in claim 11, wherein said controllable vent is capable of passing air at a higher rate than said breathable first moisture barrier.
- 15. A valved moisture barrier between first and second environments, said moisture barrier comprising first and second moisture barriers separated by an insulating space and separating said insulating space from said first and second environments, respectively, said first moisture barrier being breathable to permit passage of air between said insulating space and said first environment, and a moisture removal system coupled to said insulating space.
- 16. A valved moisture barrier between first and second environments, said moisture barrier comprising first and second moisture barriers separated by an insulating space, and a vapor pressure control system for controlling vapor pressure in said insulating space.